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| 10/054,328 | 01/21/2002 | Alfred A. Margaryan | | 8109 |

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EXAMINER

BOLDEN, ELIZABETH A

ART UNIT

PAPER NUMBER

1755

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054,328

Applicant(s)

MARGARYAN, ALFRED A.

Examiner

Elizabeth A. Bolden

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2, and 4-29 is/are pending in the application.
- 4a) Of the above claim(s) 13-15 and 27-29 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 and 12 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10 and 16-24 is/are rejected.
- 7) ☒ Claim(s) 16, 25, and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Any rejections and or objections, made in the previous Office Action, and not repeated below, are hereby withdrawn. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Election/Restrictions

Applicant's election without traverse of Group I, Claims 1-12 and 16-26 in Paper No. 3 is acknowledged.

Claims 13-15 and 27-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 3.

Claim Objections

Claim 16 is objected to for failing to define R and x. Claim 16 would be clearer if combined with claim 17.

Appropriate correction is requested.

Claim Rejections - 35 USC § 112

Claims 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 25 and 26 are directed to a barium fluorophosphates glass comprising 10 mol% $\text{Ba}(\text{PO}_3)_2$, 18 mol% $\text{Al}(\text{PO}_3)_3$, 90 mol% BaF_2 , and a dopant of either 5 mol% Nd_2O_3 or 10 mol% Er_2O_3 . The base glass components total 118 mol%, which renders the claims indefinite since it is not clear from the specification that the base glass can comprise more than 100 mol%.

Claim Rejections - 35 USC § 102

Claims 1, 2, 4, 6, 7, 16-18, 20, and 21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tran, U.S. Patent 5,809,199.

Tran discloses a fluorophosphates glass comprising up to 25 mol% of $\text{Al}_2(\text{PO}_3)_3$, $\text{Ba}(\text{PO}_3)_2$, $\text{Mg}(\text{PO}_3)_2$, and NaPO_3 , 20-45 mol% AlF_3 , 25-65 mol% RF_2 where R is an alkaline earth metal, up to 25 mol% LnF_3 where Ln is a lanthanide, and up to 15 mol% MF where M is an alkali metal. See column 3, lines 34-57. These disclosed ranges are sufficiently specific to anticipate the limitations of claims 1, 2, 4, 6, 7, 16-18, 20, and 21. See MPEP 2131.03.

Claims 1, 2, 4-10 and 16-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yamazaki et al., U.S. Patent 5,755,998.

Yamazaki et al. disclose a fluorophosphate glass comprising in mol%: 1-15 P, 1-18 Al, 0-12 Mg, 0-18 Ca, 1-21 Sr, 0-28 Ba, 0-3.5 Zn, 0.01-0.8 Eu, 0.2-4 Tb, 0-3 Sm, 0-1 Mn, 0-4Ln where Ln is at least one of Y, La, Gd, Yb, Lu, Dy, and Tm, 0-0.2 Ce, 0-3 R where R is Li, Na, and/or K, 4-55 O, 15-70 F, and 0-10 Cl. See column 3, lines 20-47. These disclosed ranges are sufficiently specific to anticipate the limitations of claims 1, 2, 4-10 and 16-24. See MPEP 2131.03.

Claim Rejections - 35 USC § 103

Claims 1, 2, 4-6, 8, 9, 16-20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodama, U.S. Patent 4,386,163.

Kodama teaches a fluorophosphates glass comprising 13-39 wt% of $\text{Al}_2(\text{PO}_3)_3$, 5-19 wt% $\text{Ba}(\text{PO}_3)_2$, 0-24 wt% $\text{Mg}(\text{PO}_3)_2$, 1-20 wt % $\text{Ca}(\text{PO}_3)_2$, 0-8 wt% AlF_3 , 2-13 wt% MgF_2 , 0-20 wt% SrF_2 , 1-33 wt% BaF_2 , 0-8 wt% YF_3 , 10-36 wt% BaO , 1.5-12 wt% Y_2O_3 and/or Yb_2O_3 , 0-6 wt% ZnO , 0-29 wt% PbO , 0-22 Nb_2O_5 . See abstract of Kodama.

The reference differs from the claims by defining the ranges on a weight percent basis rather than a molecular percent basis.

A theoretical composition in weight percent of 22 wt% $\text{Al}_2(\text{PO}_3)_3$, 19 wt% $\text{Ba}(\text{PO}_3)_2$, 1 wt % $\text{Ca}(\text{PO}_3)_2$, 2 wt% MgF_2 , 6 wt% SrF_2 , 30 wt% BaF_2 , 10 wt% BaO , 5 wt% Y_2O_3 , and 5 wt% Yb_2O_3 is equivalent to the composition in terms of molecular percent of 16.6 mol% $\text{Al}_2(\text{PO}_3)_3$, 12.8 mol% $\text{Ba}(\text{PO}_3)_2$, 1 mol% $\text{Ca}(\text{PO}_3)_2$, 6.4 mol% MgF_2 , 9.5 mol% SrF_2 , 34 mol% BaF_2 , 12.9 mol% BaO , 4.4 mol% Y_2O_3 , and 2.5 mol% Yb_2O_3 .

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a fluorophosphates glass of Kodama because a composition, which is encompassed in the ranges of Kodama, is also included in the ranges of the instant invention.

Response to Arguments

Applicant's arguments filed 19 March 2003 have been fully considered but they are not persuasive.

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The Applicant argues that Tran, U.S. 5,809,199 further contains alkali fluorides. This argument is not deemed persuasive because the Applicant's present claims do not limit the amount of alkali fluorides in the composition. Tran discloses that "no more than 15 mol% MF", where M is an alkali metal. See column 3, line 56-57 of Tran. The phrase "no more than 15 mol%" includes 0 mol%. Therefore, the alkali fluorides disclosed by Tran are optional.

Furthermore, the Applicant uses "comprising" terminology, which allows for the addition of other components even in major amounts. See MPEP 2111.03, which states:

The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps.

The Applicant argues that the glasses of Tran contain soluble components and that the instant invention claims fluorophosphates glasses that have high chemical durability. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., chemical durability) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Furthermore, Tran discloses that the glass has a high chemical durability and low solubility in water. See column 3, lines 59-61.

The Applicant recites on page 15, lines 19-21 of the amendment, "In addition, the concentration of dopants may be as high as 20 wt% that may be a very high concentration for these types of glasses compared to the cites." This statement is unclear to the Examiner. Also, neither Tran nor the instant application claims refers to the dopant concentration in wt %. Tran discloses 0-25 mol% of LnF_3 where Ln is a lanthanide (also known as rare earths), which

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anticipates the dopant component of instant claims 1, 2, 4, 6, 7, 16-18, 20, and 21. See column 3, lines 34-57 of Tran.

The Applicant argues that Yamazaki et al., U.S. 5,755,998 disclose fluorophosphates fluorescent glasses contain divalent Eu, Tb, Mn, or Sm whereas the instant application claims trivalent rare earth fluorides or oxides. This argument is not deemed persuasive because Yamazaki et al. disclose rare earth dopants (i.e. Eu, Tb, Sm, La, Gd, Yb, Lu, Dy, Ce, and Tm) and Manganese oxide as a dopant. See column 3, lines 20-47. Yamazaki et al. disclose the rare earth/lanthanide dopants in trivalent form for example Tb_2O_3 . See Tables 5 and 7. The Applicant further argues that the current application's claims dopant concentrations between 1 and 20 wt %. This argument contradicts the current application's claim language where a non-limiting example is claim 6, which recites, "the dopant on a mol percent basis is 2 to 15 percent."

The Applicant argues that the glasses of Kodama, U.S. 4,386,163, do not have overlapping ranges of components for the alkaline earth fluorides, $BaF_2 + MF_2$ ($BaF_2 + RF_x$ as recited in the claims) of the claimed range of 50 to 85 mol % whereas Kodama discloses a combined range for MgF_2 , SrF_2 , BaF_2 , AlF_3 , and YF_3 of 19-36%. This argument is not deemed persuasive because Kodama discloses ranges in weight percent for MgF_2 , SrF_2 , BaF_2 , AlF_3 , and YF_3 of 19-47 wt% where MgF_2 is from 2 to 13 wt % and BaF_2 is from 1 to 33wt%. See abstract of Kodama. The Examiner converted the examples of Kodama et al. into mole percent and the converted examples show mol % ranges for MgF_2 of 9.5-30.2% and BaF_2 of 1.8-33.1%. Moreover, the range 50-85 mol% is not presently claimed

Allowable Subject Matter

Claims 11 and 12 are allowed.

Claims 25 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fail to disclose or suggest a barium fluorophosphate glass comprising 10 mol% Ba(PO₃)₂, 18 mol% Al(PO₃)₃, 70 mol% BaF₂, and 2 mol% either Nd₂O₃ or Er₂O₃.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Bolden whose telephone number is 703-305-0124. The examiner can normally be reached on 8:30am to 6:00 pm with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on 703-308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EAB
May 28, 2003


DAVID SAMPLE
PRIMARY EXAMINER